Response ID:378 Data

1. BOSC 2017 Nominations

Self Nomination:

Yes

Nominator Information

First Name

Last Name

Nominator Title

Street Address

City

State

Postal Code

Email Address

Phone Number

Mobile Phone

Nominee Information

First Name

Sandra

Last Name

Smith

Nominee Title

Principal Toxicologist/Project Manager

Street Address

Exemption 6

Employment Information

Place of Employment/Work:

AECOM (currently maintain temporary, part-time status)

Work Street Address

9400 Amberglen Blvd

Work City

Austin

Work State:

TX

Work Postal Code

78720-1088

Work Phone Number

512-419-5366

Work Email Address

sandra.smith@aecom.com

Sector

Business

Qualifications

Primary Area(s) of Expertise

Ms. Smith is an environmental health scientist and Project Manager with many years of experience serving both industrial and governmental clients in the areas of exposure and risk assessment, hazardous air pollutants, toxic substances policy, solid and hazardous waste management, and health effects research. She directs and peer reviews human health and ecological evaluations and exposure and health risk assessments and contributes to diverse projects involving environmental permitting, database design and development, and regulatory compliance planning. Ms. Smith frequently participates in discussion and negotiation of risk management decisions with facility owners and operators, regulatory agencies, contractors, and members of the general public. She specializes in the systematic integration and interpretation of data and information from multiple scientific disciplines to improve the efficiency of environmental sampling; optimize remediation/control technologies; promote site redevelopment and use; protect public health and the environment; and improve communication among industry, government, and the public.

Committee Preference(s)

Air, Climate, and Energy Subcommittee

Statement of Interest

My main objective is to use my broad-based education in biology and environmental health/toxicology and my work experience in risk assessment and policy and regulatory analysis to collaborate on resolving complex, interconnected environmental challenges, promote sound environmental/public health policy, and encourage consensus risk management decisions. I believe my long work history for both industrial and governmental clients provides me with a balanced perspective that will allow me to offer useful advice concerning direction and focus of EPA's research programs.

Skills/qualifications related to committee preference(s) specified

BA in Biology and MS in Environmental Health. Work experience in hazardous air pollutants, air toxics, and combustion exposure and risk assessment. Management of projects that involve multidisciplinary teams of experts in source assessment, emissions evaluation, air emissions and deposition modeling, air measurements, exposure assessment, and hazard evaluation. Knowledgeable in practical applications of air quality evaluation tools.

Other Relevant Information

Ms. Smith has served on local and national boards such as the Waller Creek Conservancy (Austin, TX) and the EPA BOSC.

CV/Resume URL

2. CV/Resume

Please upload your CV/ Resume.

Sandra_Smith-15Jun2017.pdf

3.

BOSC Nomination

Jun 15, 2017 14:00:52 Success: Email Sent to: tracy.tom@epa.gov

4. Thank You for your Submission!

Exemption 6 [redacted] [redacted] [redacted]

Education

MS, Environmental Health Science, Hunter College, City University of New York, 1976

BA, Biology, Duke University, 1973

Professional History

Principal Toxicologist/Senior Project Manager, AECOM (legacy URS), Austin, TX, 2000-2016 (currently maintain temporary, part-time status).

Senior Staff Scientist/Group Leader, Radian International, Austin, TX, 1995-2000.

Senior Scientist/Group Leader, Radian Corporation, Austin, TX, 1979-1994.

Scientist/Assistant Project Manager, Fred C. Hart Associates, Inc., New York, NY, 1977-1979.

Science Instructor, Birch Wathen School, New York, NY, 1973-1975.

Affiliations

Air and Waste Management Association

Society for Risk Analysis

Certifications/Training

AECOM/URS Certified Project Manager

TxDOT Pre-Certification for Hazardous Materials Initial Site Assessment

OSHA 40 Hour Health and Safety Training/Annual Refresher

Project Management

Time Management

Excellence in Leadership

Objective

Use my broad-based education in biology and environmental health/toxicology and my work experience in risk assessment and policy and regulatory analysis to collaborate on resolving complex, interconnected environmental challenges, promote sound environmental/public health policy, and encourage consensus risk management decisions.

Overview

Ms. Smith is an environmental health scientist and Project Manager with many years of experience serving both industrial and governmental clients in the areas of exposure and risk assessment, hazardous air pollutants, toxic substances policy, solid and hazardous waste management, and health effects research. She directs and peer reviews human health and ecological evaluations and exposure and health risk assessments and contributes to diverse projects involving environmental permitting, database design and development, and regulatory compliance planning. Ms. Smith frequently participates in discussion and negotiation of risk management decisions with facility owners and operators, regulatory agencies, contractors, and members of the general public. She specializes in the systematic integration and interpretation of data and information from multiple scientific disciplines to improve the efficiency of environmental sampling; optimize remediation/control technologies; promote site redevelopment and use; protect public health and the environment; and improve communication among industry, government, and the public. Ms. Smith has served on local and national boards such as the Waller Creek Conservancy (Austin, TX) and the U.S. EPA Board of Scientific Counselors (BOSC).

Experience

Site Investigation/Remediation Risk Assessment

- Calculated alternative soil cleanup levels for mercury and cadmium based on chemical-specific and site-specific information, using methodologies allowed under the Texas Risk Reduction Program, to promote site closure at a former Air Force base in San Antonio, TX.

- Performed a tiered risk evaluation to assist the USACE in (1) evaluating existing environmental data within the Dallas Floodway Extension (DFE) project limits, and (2) developing a soil management plan to protect public health during dam construction and post-construction.

- For the U.S. Navy, prepared risk assessment plan to maximize use of existing information and past risk assessment results to evaluate chemical and radiological risk at a reconfigured site. Performed a focused risk assessment that pinpointed specific areas where remedial action is warranted.

- Prepared vapor intrusion field investigation work plan for approximately 40-acres potentially impacted by a groundwater plume. The area is a former refinery and includes properties with existing buildings and an undeveloped area. The investigation involved collecting sub-slab soil gas, indoor air, and ambient air samples at existing buildings and shallow soil gas samples at the undeveloped area. Ms. Smith participated in the data evaluation to determine if vapor intrusion from the subsurface to indoor air is a current or future migration pathway of concern.

- Derived alternate risk-based exposure levels (RBELs) for surface water that are specific to ingestion of saltwater fish from a bayou in an industrialized section of the Texas Gulf Coast. The site-specific surface water RBELs are based on methodologies used to derive the Texas Surface Water Quality Standards, but make several important adjustments to customize the levels to reflect site-specific circumstances.

- Established risk assessment Working Group comprised of Air Force (AF), U.S. Environmental Protection Agency (EPA), and Alaska Dept. of Environmental Conservation (ADEC) representatives to guide risk evaluation at remote sites on the North Slope of Alaska where standard risk assessment methodologies are not always applicable. Developed work plan documenting procedures that were used to evaluate ecological and human health risk at AF radar installations located on the North Slope. Developed risk-based screening levels for target constituents and pathways of exposure and a hazard evaluation process using consensus procedures, permitting the AF and ADEC to move sites more quickly toward risk management decisions.

- Prepared comprehensive human health and ecological conceptual exposure models for an area where fuel-related contamination occurs in groundwater off site, in a residential area, at a former tire manufacturing facility in Oklahoma. Negotiated procedures to evaluate vapor intrusion to indoor air and other potential pathways of exposure with Oklahoma Dept. of Environmental Quality.
- Directed an assessment of soil, groundwater, surface water, and sediment contamination at a former landfill site in Indiana using ASTM Risk-Based Corrective Action (RBCA) methodologies. Derived screening levels for exposure pathways that are not addressed by the RBCA guidance and developed a tool for quickly performing cumulative risk and hazard evaluations using RBCA Tier 1 and Tier 2 screening levels. The assessment served as a basis to focus remedial decisions and prioritize remedial actions at the site.
- Participated in development of a tool to quickly assess cumulative risks associated with residual contamination after soil removal or other remediation is in progress. The tool has been used to evaluate confirmation sampling and testing results at numerous solid waste management units at two refineries in Pennsylvania to determine if remediation actions are completed and can be suspended. The tool allows quick decisions to be made regarding the progress of remediation, which improves the efficiency of the allocation of remediation equipment.
- Performed screening level and comprehensive human health and ecological risk assessments involving both radiological and chemical contaminants for the U.S. Department of Energy Savannah River Site in South Carolina. As one example, developed site-specific risk-based human health and ecological benchmark values for surface water, sediment, and fish based on realistic receptors for an evaluation of the streams that drain the Savannah River Site. Existing measurement data for surface water, sediment, and fish were compared to the benchmark values to determine the need for early action; identify analytes, media, and locations requiring additional sampling and analysis; and identify and prioritize potential sources of stream contamination. The site-specific risk-based human health and ecological benchmark values provide a means to quickly and efficiently evaluate a large amount of data and numerous stream systems, and to develop a sampling plan that avoids the collection of excessive and unusable data.
- Directed the Chemical- and Site-Specific Risk Assessment (CSSRA) initiative for the Air Force Center for Engineering and the Environment. CSSRA is designed to establish procedures to incorporate state-of-the-science advances in human health and ecological risk assessment into past, present, and future risk-based decisions with respect to USAF CERCLA and RCRA sites. For this program, Ms. Smith developed a plan to implement a risk-based review of established cleanup goals that focus on incorporating new risk, toxicity, and exposure information; reviewed, assessed, and recommended risk-based tools for reviewing established risk-based cleanup goals, and for calculating risk and hazard in baseline risk assessments; and developed an education/partnering strategy to explain the needs and benefits of a risk-based review system to all stakeholders (i.e., USAF, regulators, and public). Ms. Smith developed the CSSRA Toolbox, which catalogs new or emerging tools that can be applied to an assessment of human and/or ecological risk. The Toolbox promotes the use of tools that improve the science and decrease the level of uncertainty in the risk assessment process.
- For a confidential chemical manufacturing facility, developed risk-based values for tar/soil mixture that represented the concentration in the contaminated medium that could lead to "unacceptable" inhalation exposures by workers and off-site residents, assuming volatilization from the tar/soil medium. The risk-based values were used to determine the maximum tar pit area that could be de-watered during closure construction to prevent unacceptable inhalation exposures by either workers or off-site residents. They were also used to design the cap and cover system to ensure that post-closure air emissions do not pose unacceptable inhalation exposures for workers or off-site residents.

Air Toxics

- Managed an evaluation of potential human health risks associated with VOC emissions from the U.S. DOE Waste Isolation Pilot Plant (WIPP) facility to above-ground receptors. The analysis included a review of chemical toxicity data, evaluation of releases to the exhaust shaft, air modeling, development of air dispersion factors to locations of interest, and a sensitivity analysis of the impacts of exhaust shaft configuration and other factors on estimated risk. The analysis ultimately derived risk-based limits for exhaust shaft emissions that are protective of above-ground receptor populations. Follow-on work involved re-evaluating the source term to determine if the selected analytes still represent more than 99 percent of the risk posed by emissions from the facility and identifying and reviewing emerging research and U.S. EPA actions that could result in changes to toxicity values in the near to mid-term future.
- For a chemical manufacturing facility in Kentucky that is proposing a process retrofit, evaluated readily available information on the toxicity, carcinogenicity, and mechanisms of action of vinyl acetate to determine the feasibility of deriving a credible alternative benchmark ambient concentration to the default value of the local air pollution control district.
- Prepared concept paper for the Arizona Department of Environmental Quality (ADEQ) that discusses how to obtain a metropolitan-wide assessment of risk associated with air toxics in greater Phoenix including tribal communities. The paper describes procedures for selecting constituents of interest, building spatial concentration fields using available monitoring data, quantifying exposure of city residents and workers, assessing dose-response, characterizing health risk of exposed individuals and discussing the uncertainties associated with the risk estimates.

- Directed a site-specific evaluation of potential cancer risk associated with butadiene emissions from a chemical manufacturing plant located near a residential area. Examined, evaluated, and duplicated the data, methodology, and assumptions used by U.S. EPA to generate screening level estimates. Increased precision of the estimates using data, assumptions, and methodology that best represents emissions, dispersion, exposure, and risk at the site. Performed a probabilistic assessment to develop a statistical distribution of risk using ranges derived in the earlier assessment for air dispersion, butadiene decay in the atmosphere, exposure assumptions, and the butadiene slope factor.
- Participated in Texas Commission on Environmental Quality (TCEQ) Modeling and Effects Review Applicability (MERA) team, with members from industry, consultants, public interest groups, and the agency, to work out the details of the MERA documentation. TCEQ's goals are to: (1) streamline the technical review process, (2) provide consistent review of applications, and (3) ensure protection of the environment.
- Directed a probabilistic, site-specific, health-based risk assessment of ethylene oxide emissions from an agricultural chemical manufacturing facility.
- For U.S. EPA, developed risk assessment screening procedures for estimating the air impacts of selected clean-up technologies at Superfund (CERCLA) sites.
- Developed a protocol for evaluating potential public health effects of accidental releases to the air.
- For U.S. EPA, directed the design and implementation of the National Air Toxics Information Clearinghouse, which provided information to state and local agencies for developing or operating programs to address toxic and potentially toxic air pollutants.
- Participated in the development of a seminar/workshop for state, local, and U.S. EPA Regional Office personnel on air toxics, sponsored by U.S. EPA's Manpower and Technical Information Branch.
- Directed a study to assist the State of Maryland in the development of a program to control toxic air pollutants. Identified and analyzed alternatives for state-level air toxics control.
- Directed an assessment of air program emission fee practices in fourteen states and one locality for the State of New Jersey.

Air Emissions/Combustion Risk Assessment

- Participated as project director, task leader, or peer reviewer in human health and ecological risk assessments associated with emissions of chemical and radiological constituents from a variety of facilities located in states such as Kentucky, Ohio, Tennessee, and Texas. The assessments follow the U.S. EPA Human Health Risk Assessment Protocol (HHRAP) for Hazardous Waste Combustion Facilities and applicable state guidance and use the Industrial Risk Assessment Program (IRAP) risk assessment model. The assessments range in scope from screening level using mostly default parameters to site- and facility-specific assessments that focus on examining the major uncertainties and developing more realistic information as input for the model.
- Performed detailed review of risk assessment calculations and associated text of an evaluation of potential risks to near-by off-site receptors due to emissions of chemicals of concern into ambient air from the proposed excavation of contaminated soil.
- Examined the potential health risk from compounds released by three coal-fired power plants in Texas, as reported by U.S. EPA's Toxic Release Inventory (TRI). The TRI program releases data on gross emissions from air release sources, but does not provide information to understand the significance of the emissions.
- Assessed a proposed commercial hazardous waste incinerator for a private client. Developed waste concentration and feed limits for the incinerator, which are based on protection of the public from adverse health effects associated with long-term inhalation and ingestion exposures.

Environmental Health Science

- Conducted a chemical hazard screening program to identify and summarize the reported health effects associated with the input materials and specialty chemicals used by the plastics and resins industry. Evaluated data on approximately 500 chemicals and classified each chemical by degree of hazard.
- Developed a system to screen for potential hazards associated with major industrial processes. Designed scoring components for the potential for release of contaminants, the potential magnitude of release for individual contaminants, population at risk of exposure, and degree of hazard associated with individual contaminants. Tested the system using data for twenty major energy producing and/or energy consuming processes.
- Compiled relevant data for use as exposure indices and evaluated significance of measured ambient air concentrations for approximately 180 compounds detected in the ambient air of a large urban center.

Policy/Regulatory Analysis

- Provided supporting documentation for use in U.S. EPA's decision on whether or not to regulate polycyclic organic matter (POM) in the air.
- Analyzed the applicability of state and federal VOC and TSP regulations in the control of certain specific compounds.
- Evaluated U.S. EPA's proposed gasoline lead-content regulations.
- Participated in a program to support U.S. EPA in developing New Source Performance Standards for industrial boilers. Evaluated policy implications of the new standards, such as their effect on emerging coal technologies and the demand for low sulfur coal.
- Evaluated air pollution/health effects research needs for the State of Texas.

Solid and Hazardous Waste Management

- Directed preparation of RCRA Part B applications for several clients, including a national research laboratory and a chemical company. Regularly contributed to the preparation of RCRA Part B applications, primarily in the area of health and safety.
- Prepared risk/endangerment assessment reports as part of the Remedial Investigation/Feasibility Study (RI/FS) process at many hazardous waste sites, including Superfund sites. Participated in evaluation and selection of remedial action alternatives.
- Developed a scheme to apportion the costs of remedial action at a closed waste disposal site. Designed scoring components, which incorporate considerations such as the quantities of waste disposed at the site by more than 200 waste generators, waste types, and the hazard potential and mobility of individual contaminants escaping from the site.
- Identified and evaluated issues in the management of coal-based energy wastes for U.S. DOE.
- Investigated the feasibility of mine disposal of coal combustion wastes for a utility.
- Directed an analysis of the solid waste impacts of the federal program for oil and gas displacement, including an assessment of the health effects resulting from increased levels of coal ash and scrubber sludge production.
- Assessed record keeping and reporting requirements to support the development of an automated information management system for a commercial multi-site hazardous waste management company.

Presentations and Publications

Ms. Smith has authored or co-authored many papers in the areas of health risk assessment, air toxics, and environmental issues in energy technology, and has been a major contributor to numerous technical reports in the areas of risk assessment, toxic substances policy, energy and environmental policy, and health effects of industrial developments. Selected presentations and publications include:

Smith, S.A, and M.R. Roy, "Making Risk-Based Decisions on the North Slope of Alaska: Applications of Lessons Learned at Locations with Unique Environmental and Cultural Conditions", presented at the 16th International Petroleum Environmental Conference, Houston TX, November 4, 2009. Session chair of session titled "Site Characterization, Forensic Analysis, and Risk Management".

Roy, M.M., S.A. Smith, and B. Eklund, "Evaluating Vapor Intrusion in Ecological Risk Assessment", presented at the 2009 DoD Environmental Monitoring and Data Quality Workshop, San Antonio, TX, March 30-April 3, 2009.

Smith, S.A., "Current Status of Residual Risk", presented to the Port Industries Technical Committee, Corpus Christi, TX, March 19, 2009.

Smith, S.A., H.A. Patton, and M. Keener, "The Status of Residual Risk", presented at the 2008 International Conference on Incineration and Thermal Treatment Technologies, Montreal, Canada, May 12-16, 2008 (also published in Conference Proceedings).

Smith, S.A., "Human Health and Ecological Risk Assessments on the North Slope of Alaska: Development of a Consensus Approach", presented at the U.S. Air Force Environment, Safety, and Occupational Health (ESOH) Training Symposium, Reno, Nevada, March 4, 2008.

Smith, S.A., "Human Health and Ecological Risk Assessments on the North Slope of Alaska: Application of Lessons Learned", presented to graduate seminar in toxicology at the Texas A&M School of Public Health, February 25, 2008.

Smith, S.A., M.R. Roy, B. Basile, and R. Porter, "Application of Human Health and Ecological Risk Assessment", three hour workshop presented at the 14th International Petroleum Environmental Conference, Houston TX, November 7, 2007.

Porter, R. (Noblis), M. Sprenger (U.S. EPA), M. Brewer (Alaska DEC), D. Cook (U.S. AF), M. Roy (URS), and S. Smith (URS), "Streamlined Approach for Risk Evaluation of Military Radar Installations on the North Slope of Alaska", presented at the Society for Environmental Toxicology and Chemistry Annual Meeting, Milwaukee, Wisconsin, November 11-16, 2007.

Smith, S.A., H.A. Patton, and D. Packy, "Does Quantitative Risk Assessment Facilitate or Encumber Regulatory Decision Making in the Hazardous Waste Combustion Arena?," presented at Air and Waste Management Association Hazardous Waste Combustors Conference and Exhibition, Charleston, SC, March 13-14, 2007.

Smith, S.A., "Using Screening-Level Cumulative Risk Assessment to Manage Large Data Sets Efficiently," presented at Tri-Services Risk Assessment Meeting, San Antonio, TX, September, 2004.

Smith, S.A., H.A. Artz, and M.R. Fuchs, "Hazardous Waste Combustion Risk Assessments: Bridging the Divide Between Risk Estimates Based on Potential Future Conditions and the Regulatory Requirement to Issue a Health Protective Permit," presented at the Society for Risk Analysis Annual Meeting, Baltimore, MD, December 7-10, 2003.

Smith, S.A., H.A. Artz, E.Y. Youngerman, and S. Fincher, "How Much Influence Does Particle Size Distribution Have on Estimated Risk?," presented at the 2001 International Conference on Incineration and Thermal Treatment Technologies, Philadelphia, PA, May 14-18, 2001 (also published in Conference Proceedings).

Smith, S.A., "Review and Update of Cleanup Goals through the RPO Process," presented at Remedial Process Optimization Topical Conference: Promoting Risk Protective Cost Effective Site Closeout, 6-8 March 2000, Atlanta, Georgia, sponsored by the Air Force Center for Environmental Excellence and the American Institute for Chemical Engineering.

Smith, S.A., "Risk-Based Corrective Action," in Brownfields Law and Practice: The Cleanup and Redevelopment of Contaminated Land, edited by Michael B. Gerrard, Mathew Bender & Co., Publication No. 438, 1998.

Smith, S.A., C.C. Mecham, B.J. Schimmoller, and M.H. Wheeler, "Using Measured Contaminant Concentrations Versus Modeling for CERCLA-Related Air Pathway Risk Assessments," in Hazardous Waste: Impacts on Human and Ecological Health, U.S. Department of Health and Human Services, 1997. This paper was selected for publication in a special edition of Toxicology and Industrial Health, Vol. 13, No. 2/3, 1997.

Del Pup, J., J. Kmiecik, S. Smith, and F. Reitman, "Improvement in human health risk assessment utilizing site-and chemical-specific information," in Toxicology 113 (1996), 346-350.

Smith, S.A., "Practical Applications of Risk Assessment, A Short Course," presented to graduate students in toxicology, University of Texas Health Science Center, Galveston, TX, October 1, 1996.

Smith, S.A., C.C. Mecham, and M.H. Wheeler, "Using Measured Contaminant Concentrations Versus Modeling Results for CERCLA-Related Air Pathway Risk Assessments," presented at International Congress on Hazardous Waste: Impact on Human and Ecological Health, 5-8 June, 1995, Atlanta, GA, sponsored by U.S. Department of Health and Human Services, Public Health Service, Agency for Toxic Substances and Disease Registry.

Del Pup, J., J. Kmiecik, S. Smith, and F. Reitman, "Improvement in Human Health Risk Assessment Utilizing Site- and Chemical-Specific Information: A Case Study," Appendix G, in Science and Judgment in Risk Assessment, National Research Council, National Academy Press, Washington, D.C., Prepublication Copy, 1994.

Smith, S.A., R. Joseph, and J.R. Beck, "Inhalation of Volatile Chemicals from Residential Use of Contaminated Water," in Superfund Risk Assessment in Soil Contamination Studies, American Society for Testing and Materials, ASTM 04-011580-38, 1992.

Hixson, E.J., R.E. Jennings, and S.A. Smith, "Contribution of Childhood Ingestion of Contaminated Soil to Lifetime Carcinogenic Risk: Guidance for Inclusion in Risk Assessment," in Superfund Risk Assessment in Soil Contamination Studies, American Society for Testing and Materials, ASTM 04-011580-38, 1992.

Parmley, R.D. and S.A. Smith, "Comparison of ISC and other Modeling Approaches and Evaluation of Other Toxic Risk Uncertainties," presented at the National Air and Waste Management Association Conference, 92-84.08, 1992.

Eklund, B., S. Smith, and J. Durham, "Estimation of VOC Emissions, Ambient Air Concentrations, and Health Effects from the Excavation of Contaminated Soil," presented at the National Air and Waste Management Association Conference, 92-11.11, 1992.

Smith, S.A., R. Joseph, and E.J. Hixson, "Inhalation of Volatile Chemicals from Residential Use of Contaminated Water," Poster Presentation at the Conference on Chemical Risk Assessment in the DoD: Science, Policy, and Practice, 9-11 April, 1991, Dayton, OH, sponsored by Armstrong Laboratory, Naval Medical Research Institute, and the Army Biomedical Research and Development Laboratory.